

Having an Angiogram and Angioplasty

Information for Patients

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Introduction

This leaflet tells you about having an angiogram and angioplasty. It explains what is involved and what the possible risks are.

If you have any questions or concerns, please do not hesitate to speak to a doctor or nurse caring for you in the Interventional Radiology department.

What causes arterial disease?

Arteries are the tubes that carry blood to all parts of the body. Atherosclerosis is a disease that narrows the arteries by the thickening and hardening of artery walls and by a build up of fatty-like deposits in their linings. When it occurs in the limbs it is called Peripheral Vascular Disease (PVD). PVD reduces the blood supply to the legs and can cause pain on exercise (intermittent claudication) or, in more severe cases, pain at rest.

What is an angiogram?

An angiogram is an X-ray test that gives detailed pictures of the arteries. This is achieved by placing a tube (catheter) into an artery via an incision at the groin, to inject an X-ray dye (contrast) that shows the arteries on an X-ray image. It is often performed prior to and/or as part of an angioplasty procedure.

What is an angioplasty?

An angioplasty is a treatment for Peripheral Vascular Disease where catheters similar to those used for angiograms are used to dilate (open up) narrowed or blocked arteries. An angioplasty may be performed immediately following an angiogram, or may be done as a separate procedure.

An angioplasty is carried out using X-rays to guide the procedure. A catheter with an inflatable balloon near its tip is inserted into the artery and advanced until the tip is beyond the narrowing. Once the balloon is within the narrowed segment, it is inflated with a special dye known as contrast medium to enable the radiologist to see it on the X-ray monitor. As the inflated balloon opens up the narrowed artery, the stretching of the arterial wall may be inflated and deflated several times during the angioplasty. When the radiologist is satisfied that the artery has been opened up sufficiently, he or she will remove the balloon catheter and check the result with an angiogram.

Angioplasty has a high success rate but it is not always possible to dilate or fully unblock an artery. It may be necessary to place a stent (a hollow metal tube) across the narrowing to keep the artery open. If this is not successful, surgery may still be an option that your surgeon would discuss with you.

What are the risks and benefits of an angiogram and/or angioplasty?

The benefit of an angiogram is that it gives detailed pictures of arteries and allows the most appropriate treatment to be chosen. The benefit of a successful angioplasty is the improvement or eradication of symptoms, thereby improving the quality of life. Research also shows that the benefits from angioplasty last longer if patients do not smoke.

A common but usually minor complication of arterial catheterisation is a bruise at the puncture site. Very rarely this may be extensive enough to delay discharge from the hospital. Even more rarely, the catheterised artery may be damaged to an extent requiring surgery.

The type of X-ray contrast media used today are extremely safe but, like any other drug, have a potential for harm. Possible ill-effects from their injection include impairment of the kidney or heart function and allergic reactions, but such adverse reactions are extremely rare.

Peripheral vascular disease may put life and limb at risk and just performing an angiogram or angioplasty can also, although very rare, incur such risks. The risks of the procedure must be seen in context and your surgeon will not request, nor will your radiologist perform, an angiogram or an angioplasty unless the potential benefits to you outweigh the very slight risks attached to the procedure.

What do I need to do to prepare for the procedure?

If you are taking Warfarin, Clopidogrel, aspirin or other blood thinning medications (such as Phenindione, Clopidogrel Rivaroxaban, Prasugrel, Dabigatran, Apixaban), please inform the Radiology department at least one week before the procedure, as these may need to be stopped for a number of days before the examination. You will need to have a blood test before the procedure to check your blood clotting. Your doctor or clinical nurse specialist will tell you about this and how to arrange it.

If you are a diabetic taking the drug Metformin you should inform the vascular doctor or your GP as soon as possible, as this will need to be stopped immediately prior to the procedure and recommenced 48 hours following the procedure. During this time you may be given an alternative drug to control your diabetes. Please continue to take all your other medications as usual.

You may already be an inpatient or, if not, you will be admitted into hospital on the previous day or the day of your procedure. On admission you will be informed of the approximate time of your procedure. However, this may change due to unforeseen circumstances.

A doctor will go through your medical history and explain the procedure answering any questions you or your family may have. When all your questions have been answered you will be asked to sign a consent form for the procedure.

You will not be allowed to eat for 6 hours or drink for 3 hours before the procedure. If you are a diabetic your blood sugar levels will need to be monitored to ensure they remain within stable limits.

Both of your groins will need to be shaved before the procedure. If you wish, you may do this yourself before you come into hospital.

Before the procedure you will be asked by the ward staff to change into a hospital gown. Underwear will need to be removed at this time or on arrival in the Radiology department.

It is not necessary to remove hearing aids, dentures, glasses or jewellery for the procedure. However, just before you leave the ward, empty your bladder so that you will be comfortable during the procedure.

What happens before the procedure?

When it is time for the procedure you will be taken on your bed to the Radiology department, where you will be welcomed by the radiology staff:

- The Radiologist is a doctor specially trained to interpret the angiogram and perform the angioplasty.
- Radiographers are specially trained health professionals who move and control the radiographic equipment during the procedure.
- Radiology Nurses work with the radiologists and care for the patient during interventional procedures.

A nurse will check your details. Please tell the nurse if you have asthma, or are allergic to any medications, skin cleaning preparations, iodine or the contrast medium (special dye used to highlight blood vessels on X-rays) used for the procedure.

What happens during the procedure?

You will be taken into the Interventional radiology room and helped onto the X-ray table. You will have a device attached to your finger to monitor your heart rate and breathing. A cuff will be placed on your arm to monitor your blood pressure (please inform the nurse if there is a reason why a certain arm cannot be used). The nurse will clean the shaved area in your groin with an antiseptic solution and place sterile towels over you. An X-ray camera suspended over the table will be used to take images during the procedure. It will come close to you but will not touch you.

The radiologist will firstly inject a local anaesthetic into your groin to numb the area. This may cause some stinging, but it will only last a short time. After the local anaesthetic takes effect, you should feel only dull pressure where the radiologist is placing the

catheter. When the catheter is in place, contrast medium is injected through the catheter and simultaneously a series of pictures are taken to show up the arteries (the angiogram). The contrast medium may give you a warm feeling together with the sensation that you are passing water, but remember it is only a sensation and will pass within seconds. It is important that you lie still whilst the angiogram is taking place in order that the best possible pictures can be taken.

The angiogram and/or angioplasty procedure may last between 30 minutes to two hours.

What happens when the procedure is finished?

When the angiogram and/or angioplasty is finished, the catheter in your groin will be removed. The point where the catheter was inserted will be pressed on for up to 10 minutes to seal the arterial hole (the puncture site) in order to stop any bleeding.

After the bleeding has stopped, you will be transferred onto a trolley and taken back to your ward to recover. On your return to the ward you will need to lie flat for 4 hours and remain on bedrest for up to 12 hours. During this time the nursing staff will regularly check your puncture site, blood pressure and pulse (including foot pulses). You may eat and drink whilst on bedrest and your family may visit. Drink all the fluids that you are offered, as this will help to flush the contrast medium into your kidneys and out of your body.

Once you have recovered, your doctors will be able to discuss the results of your angiogram and/or angioplasty with you.

What to expect after the procedure

It is common, following an angiogram or angioplasty, to develop some bruising in the groin and experience some local discomfort. This will vary between individuals but it will get better within 1 or 2 weeks.

Advice on discharge

Do take things gently for the next 3 days. Take plenty of rest.
Continue with all your medication

Do not drive for 24 hours.
Do not return to work for at least 3 days (please discuss with the vascular doctors)

Follow this advice and you will reduce the risk of bleeding from the puncture site and make a good recovery.

Any questions?

We will do our best to make your visit as comfortable and stress free as possible. If you have any questions or suggestions for us, please contact the Interventional Radiology department on 01225 824375.

More information

For general information about Radiology departments, visit The Royal College of Radiologists' website: <https://www.rcr.ac.uk/public-and-media/what-expect-when>

For information about the effects of x-rays read the National Radiological Protection Board (NRPB) publication: 'X-rays how safe are they?' on the website: http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947388410

How do I make a comment about my procedure?

If you have any concerns or suggestions following your procedure, please contact the [Patient Advice and Liaison Service \(PALS\)](#),
Royal United Hospital Bath NHS Trust, Combe Park, Bath BA1 3NG.
Email: ruh-tr.PatientAdviceandLiaisonService@nhs.net
Tel: 01225 821655 or 01225 826319